

HEMIPTERA.

Two species of Rynchota Hemiptera were obtained by Mr. Peel.

ODONTOPUS SEXPUNCTATUS (Lap.).

One specimen from Bularli in West Somaliland, May 25, 1895; and others from the 1897 Expedition in Central and East Somaliland (no further locality).

Two specimens of another species in bad condition were also obtained in 1897. (W. L. D.)

9. CHILOPODA AND ARACHNIDA.

By R. I. Pocock.

The Arachnida collected by Mr. Peel proved on examination to be exceptionally interesting. Of the six species of Acari, two of the parasitic species of the genus *Rhipicephalus* seem to be well-marked new forms. One of them is represented by both males and undistended females; the other unfortunately by a single male, but this specimen differs so strikingly in colour from all the species of the genus recently recorded in Neumann's useful monograph of the group, that I have not hesitated to describe it as new. Mr. Peel was even more fortunate with his Scorpions. He collected only five specimens; but they represent four species, three of which have never been previously described. Two of these, *Buthus calviceps* and *Pandinus pugilator*, are exceptionally well-marked forms; while the third species, which I have dedicated to Mr. Peel, belongs to a section of the genus peculiar to Somaliland and hitherto represented by a single species.

The working out of this material has entailed a revision of the Scorpions of Somaliland, based upon those contained in the collection of the British Museum. The results have been incorporated in a supplement to the report upon Mr. Peel's collection, in the hope that sportsmen and naturalists who visit this country may see at a glance what is known of these animals and may be induced to follow, so far as collecting is concerned, the examples of Messrs. Lort Phillips, Donaldson Smith, and Peel.

Class CHILOPODA.

Family SCOLOPENDRIDÆ.

Two representatives of this family were obtained, April 25-28, 1895, at Hargaisa, North-west Somaliland, namely *Ethmostigmus trigonopoda*, a species which is distributed throughout tropical Africa, and a damaged example of a species of *Rhysida* probably referable to *R. paucidens*, Pocock¹, originally procured at Loga in the Arnec Galla country, but the absence of the anal legs makes the determination doubtful.

The specimens of these species are in the Hope Museum at Oxford.

¹ In Donaldson Smith's 'Through Unknown African Countries,' p. 404 (1897).

Class ARACHNIDA.

Order ACARI.

Family TROMBIDIIDÆ.

Genus TROMBIDIUM.

TROMBIDIUM TINCTORIUM (Linn.), Trouess.

Trombidium tinctorium, Trouessart, Ann. Soc. Ent. France, 1894, pp. 89-91 & 94, fig. *a*.

Loc. Hargaisa in North-west Somaliland (April 25-28, 1895).
Two specimens in the Hope Museum at Oxford.

Family ARGASIDÆ.

Genus ORNITHODOROS Koch.

ORNITHODOROS SAVIGNYI (Aud.).

Argas savignyi, Aud., Description de l'Égypte, Hist. Nat. i. pl. iv. fig. 5; Explanation of Plates, p. 183 (1827).

Ornithodoros savignyi, Neumaun, Mém. Soc. Zool. France, x. p. 26 (1897).

Loc. Bularli in West Somaliland (May 1895). Six specimens, two in the British Museum, the rest in the Hope Museum at Oxford.

Family IXODIDÆ.

Genus HYALOMMA C. Koch.

HYALOMMA GROSSUM C. Koch.

Hyalomma grossum, C. Koch, Arch. Natur. x. i. p. 220, no. 2, Uebersicht etc. iv. p. 34, pl. ii. fig. 8 (1847).

Loc. Bularli in West Somaliland (May 1895).

A single distended female, probably referable to this species; in the Hope Museum at Oxford.

Genus RHIPICEPHALUS C. Koch.

RHIPICEPHALUS SANGUINEUS (Latr.).

Ixodes sanguineus, Latreille, Hist. Nat. Crust. Ins. i. p. 157 (1804).

Rhipicephalus sanguineus (Latr.), Neumann, Mém. Soc. Zool. France, x. p. 385 (1897).

Loc. Bularli in West Somaliland (May 1895).

Three specimens, one in the British Museum and two in the Hope Museum at Oxford.

RHIPICEPHALUS MARMOREUS, sp. n. (Plate III. figs. 1-1 d.)

♂. *Colour*. Caputulum yellowish brown; dorsal surface of body yellowish white, with five large deep red-brown patches, one on each side extending backwards from the cervical groove, one on each side longitudinal and sending off towards the middle line a broad transverse bar, and a large posterior median patch with convex hinder border and anterior border produced forwards in the middle line, also a narrow brown band running round the margin of the dorsal scute; legs yellowish brown, with a broad longitudinal white band on the upperside of the femora, patellæ, and tibiæ; ventral surface of body whitish, with chitinous sclerites deep brown like the legs.

Posterior border of *capitulum* evenly concave, the angles moderately produced; lateral margins moderately, not strongly diverging, the anterior border only a little wider than the posterior.

Dorsal plate almost entirely covering the sides of the body, leaving merely a narrow marginal membranous rim; cervical grooves distinct, short; marginal groove represented by a series of coarse punctures; three posterior punctured grooves on the posterior dark patch; for the rest the dorsal plate is without grooves but is pitted with coarse scattered punctures; the posterior rim divided by short sulci into eleven festoons. Ventral area with a single long piriform adanal plate, which is narrowed in front and extends backwards almost to the posterior coxæ; its external border slightly convex, internal border concave in the middle, convex in the anterior and posterior third, posterior border oblique and ending internally in a rounded rectangular prominence; a single small median sclerite on the postanal membranous area. *Coxæ* of anterior legs produced into two strong spiniform processes; of 2nd to 4th with a single distal spiniform process on the posterior side.¹

Total length of dorsal plate 3.8 mm.

Loc. Bularli in West Somaliland (May 1895).

A single specimen (♂ type) in British Museum.

RHIPICEPHALUS ARMATUS, sp. n. (Plate III. figs. 2-2 f.)

♂. *Colour* a tolerably uniform deep brown, with black markings on the grooves of the dorsal plate; legs deep brown; ventral area pale.

Capitulum with posterior border straight in the middle, its angles more abruptly spiniform than in *R. marmoreus*, its lateral margins more obliquely diverging in their posterior two-thirds, then abruptly converging. *Dorsal scute* not quite covering the lateral area, with normal cervical grooves; marginal groove deep, strongly pitted, extending from a point on a level with the cervical groove to the beginning of the festoons of the posterior border; posteriorly there is a pair of deep pitted grooves, and between

¹ Owing to the dried state of the specimen, satisfactory examination of the mandibular armature was impossible.

them and the marginal groove on each side another similar but curved groove which extends from in front of the middle of the dorsal area back as far as the posterior end of the marginal groove; in addition to the punctures in the grooves there are a few coarse punctures scattered here and there; posterior border with eleven festoons. *Adanal plates* narrowed in front, but not extending far forwards beyond the anus; their inner border nearly straight, external border convex; posterior border produced into a short external and a long spiniform internal tooth, which projects nearly as far back as the posterior border of the dorsal plate, the apex of this spine is obliquely truncate and subbifid, above it is a second strong spine; a pair of postanal sclerites. *Coxæ* of 1st leg strongly bidentate; of 2nd to 4th also bidentate, the two teeth being on the posterior border, one proximal, the other distal and thinner. Total length 4·8 mm.

Two undistended female specimens, probably referable to this species, have the cephalic plate about as wide as long, reddish in the middle, blackish at the sides, the cervical grooves deep, a row of large punctures representing the marginal grooves on each side, some large punctures along the lateral edge in front of the eye, a few between the cervical grooves, and a few large ones and many smaller ones on the middle of the posterior area. The *abdomen* is impressed posteriorly with three shallow grooves and is obsoletely festooned. *Coxæ* of the legs posteriorly weakly bispinate, the external spine being the larger.

Loc. Bularli in West Somaliland (May 1895).

Six specimens. Type (male) and two co-types (male and female) in the British Museum. Three co-types (2 males and 1 female) in the Hope Museum at Oxford.

The males of the three species of this genus obtained by Mr. Peel may be determined as follows:—

- (♂) *a.* Dorsal plate marked behind with a pair of moderately long grooves, one on each side of the middle line; between these and the deep marginal groove there is a third long and deep groove extending from the second or third sulcus of the festooned border past the middle of the dorsal plate; adanal plate produced behind into a long and strong spiniform process, immediately above which there is a second strong spine; a pair of chitinous postanal sclerites *armatus.*
- b.* Dorsal plate with a longish posterior median sulcus and a pair of shallower impressions, one on each side of it, with only a very short shallow and inconspicuous groove between the marginal groove and the middle line; adanal plate not produced behind into a long spiniform process; no spine above the termination of this plate.
- a'.* Dorsal plate yellowish white, with large symmetrically disposed reddish-brown patches; legs brown, painted with white above; dorsal plate sparsely punctured; marginal groove represented by a series of punctures. *marmoreus.*
- b'.* Dorsal plate deep brown with blacker patches and yellow lateral margin; legs uniformly brown; dorsal plate closely and irregularly punctured; marginal groove distinct *sanguineus.*

Order ARANEÆ.

Unfortunately the few Spiders obtained by Mr. Peel were not all preserved in such a manner as to make their specific determination possible, being dried, pinned, and for the most part very much shrivelled. The following forms, however, are recognizable.

1. *ARANEUS HOPLOPHALLUS* Poc. (Bull. Liverpool Museum, ii. p. 40, 1899.)

An adult male certainly belonging to this species and a female doubtfully referred to it, the former from Berbera in North-west Somaliland, the latter from East Central Somaliland (1897). The type was procured in Sokotra and is preserved in the British Museum; the specimens procured by Mr. Peel are in the Hope Museum.

2. *ARANEUS NAUTICUS* L. Koch.

A single female, most likely of this species, from Berbera, in the Hope Museum.

3. *CEBRENNUS ÆTHIOPIUS* Simon.

A single immature female, probably referable to the Abyssinian species, was taken in Eastern Central Somaliland. In the Hope Museum.

4 & 5. *OXYOPES* sp.?

Two specimens from Western Somaliland, each representing an indeterminable species. In the Hope Museum.

Order SCORPIONES.

Family SCORPIONIDÆ.

Genus *PANDINUS* Thorell.

PANDINUS PUGILATOR, sp. n. (Plate IV. figs. 1, 1 a.)

Colour of chelæ, tail, and upperside of body olive-brown, the hands rather paler; legs and vesicle of tail clear pale yellow.

Carapace smooth, sparsely punctured above, granular at the sides, its length exceeding that of the movable digit and almost equalling that of the 3rd and 4th tail-segments.

Tergal plates granular laterally; the last more or less granular throughout. *Sternal plates* smooth, the last weakly crested.

Tail short and slender, less than three times the length of the carapace, considerably narrowed posteriorly; the 4th segment about twice as long as wide, the 5th considerably more than twice as long as wide; 1st segment weakly granular above, for the rest smooth, all its keels smooth; 2nd segment entirely smooth, 3rd with the four inferior keels strong, rugose, the intervening spaces granular; 4th with the infero-lateral keels strong and denticulated,

the inferior median keels not differentiated amongst the coarse granules covering the lower surface of the segment; 5th segment with the inferior keels denticulated, the area between them coarsely granular; upperside of the 3rd, 4th, and 5th segments smooth, the keels also smooth or at all events only roughened with pores; vesicle granular, narrow, its width equal to its height and only about one-third the length of the vesicle and aculeus.

Chelæ: humerus coarsely granular above, its anterior surface with strongly granular crests; lower surface granularly crested behind; brachium finely granular in front, also roughened with pores and granules behind; hand wide, its width about equal to the length of the movable digit, its upper surface smooth posteriorly on the lobe, the area just above external keel coarsely granular, the rest covered with low more or less anastomosing tubercles, which are, however, more distinct towards the base of the immovable digit: the inner edge smooth, though the granules of the lower surface run right up to it or even project slightly beyond it: the lower surface sparsely granular, with two weakly defined keels; keel defining the hand-back above very strong and prominent.

Legs smooth; protarsal segment of 1st and 2nd with a single external apical spine; tarsi armed with eight spines, two on each side being on the lobe, one on its lower angle, the other in the middle as in *P. colei*, *P. bellicosus*, &c.

Pectinal teeth 17.

Measurements in millimetres. Total length 93; length of carapace 18, of tail 48; width of 1st segment 5·8, of 4th 3·5, of vesicle 3·2; width of hand 16, length of movable digit 17.

Loc. North-west Somaliland (Berbera or Hargaisa). A single specimen (type) in the British Museum.

Recognizable by the granulation of the lower side of the 4th caudal segment and the obsolescence of its inferior median crests, &c.

PANDINUS PEELI, sp. n. (Plate IV. fig. 2.)

♂. Closely allied to *P. colei* (Pocock), but differing in the characters pointed out in the table given below (*cf.* p. 62).

Carapace quite smooth above, sparsely punctured, much less closely granular laterally than in *P. colei*. *Terga* weakly granular at the sides only, not closely granular throughout the posterior half as in *P. colei*. *Chelæ* larger than in *P. colei*; upper crest of brachium smooth; upperside of hand externally granular as in *P. colei*, but internally much smoother, the granules anastomosing and running together into ridges which become almost obsolete on the posterior lobe of the hand. Fourth abdominal *sternum* obsoletely granular in the middle. *Pectinal teeth* 15.

Measurements in millimetres. Total length 81; length of carapace 14·5, of tail 38, of underhand 10; width of hand 13·5.

Loc. North-west Somaliland (Berbera or Hargaisa). A single specimen (type) in the British Museum.

Family BUTHIDÆ.

Genus UROPLECTES Peters.

UROPLECTES FISCHERI (Karsch).

Lepreus fischeri Karsch, Mitth. Münch. ent. Ver. 1879, p. 124.

The two specimens of this species that were obtained in North-west Somaliland (at Berbera or Hargaisa) agree closely in characters with those collected by Dr. Donaldson Smith at Luumo and Turfa, and discussed on pp. 400-401 of that author's account of his expedition. One of Mr. Peel's specimens is in the British Museum, the other in the Hope Museum at Oxford.

Genus BUTHUS Leach.

BUTHUS CALVICEPS, sp. n. (Plate IV. figs. 3-3 a.)

Colour (dry specimen): trunk blackish yellow; appendages uniform pale yellow.

Carapace weakly granular; keels almost entirely obsolete, only the anterior median distinct but failing to attain the front border of the carapace. *Tergal plates* rather coarsely granular: keels normal and granular. *Sternal plates* smooth and polished; the last very finely granular at the sides, polished and rather coarsely but sparsely punctured in the middle; the lateral keels almost obsolete, represented by about three larger granules.

Tail of medium thickness, nearly five times the length of the carapace, posteriorly narrowed; the sides and upper surface of the segments normally crested, the intercarinal spaces finely granular; the median lateral keel complete on the 2nd and almost complete on the 3rd segment; lower surface of 1st, 2nd, and 3rd segments rather coarsely but strongly punctured with setiferous pores; the median keels of the 1st obsolete, those of the 2nd and 3rd strong and denticulated, increasing in strength posteriorly, the inferior laterals of these segments also strong and denticulated, converging posteriorly and fusing, like the medians, with a transverse granular crest; lower surface of the 4th weakly granular, without median keels; 5th segment without a trace of superior lateral keels, finely granular below, with a few coarser granules intermixed, the median keel denticulated; the laterals strongly denticulated, with at least one large lobate tooth behind the middle of their length, ending behind in a big subdivided lobe on each side of the anal aperture; *vesicle* of medium size, smooth, punctured.

Chelæ weak; humerus granular above, normally crested; brachium smooth, weakly crested, anterior surface with two weakly granular keels; hand smooth, small, narrower than brachium, movable digit with eight rows of teeth along the middle line, the basal row long and rising right at the extremity of the segment, the lateral teeth forming short oblique rows of three each, two

outer and one inner ; finger a little more than twice the length of the underhand.

Legs with granularly crested femora ; the feet with two rows of hairs below.

Pectinal teeth 21.

Genital operculum considerably longer than sternum.

Measurements in millimetres. Total length 31 ; length of carapace 3·5, of tail 17·5 ; length of movable digit 3.

Loc. North-west Somaliland (Berbera or Hargaisa). A single specimen (type) in the British Museum.

In size and some points of structure this little *Buthus* approaches *Nanobuthus andersoni* Poc., obtained at Duroor to the north of Suakim (Journ. Linn. Soc., Zool. xxv. p. 314). The dentition of the mandible and of the digits of the chelæ, however, is quite normal for the genus *Buthus*. The most striking structural peculiarities of the species are : (1) the obsolescence of all the cephalothoracic keels with the exception of the anterior median ; (2) the coarse but sparse punctuation of the last sternite and of the lower side of the first caudal segment, accompanied as it is by the disappearance of the median keels ; (3) the disappearance of the median keels on the lower side of the 4th caudal segment. These characters do not co-exist in any species known to me. Judging from the structure of the inferior lateral keels of the 5th caudal segment and of the inferior keels of the 2nd and 3rd segments, this species belongs to the same category as *B. occitanus*.

10. GENERAL LIST OF THE SCORPIONS OF SOMALILAND AND THE BORAN COUNTRY. By R. I. POCKOCK.

Family BUTHIDÆ.

Genus UROPLECTES Peters.

UROPLECTES FISCHERI (Karsch).

Lepreus fischeri, Karsch, Mitth. Münch. ent. Ver. iii. p. 124 (1879).

Loc. Barawa (*Karsch*), Turfa and Lummo (*Donaldson Smith*), and Berbera and Hargaisa (*C. V. A. Peel*).

To the south of Somaliland the typical form of this species is replaced by two subspecies, one paler, the other darker than *U. fischeri typicus*. The three may be contrasted as follows :—

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|---|--------------------------------------|
| a. Hands entirely pale, body banded above as in <i>fischeri typicus</i> | <i>f. flavimanus</i> , subsp. [nov.] |
| b. Hands wholly black or at least lined with black and black at base of fingers. | |
| a'. Terga yellow, with a pair of black spots ; carapace and terga broadly yellow at the side ... | <i>f. typicus</i> . |
| b'. Terga mostly black, with a narrow median and lateral marginal band, much less yellow at side of carapace..... | <i>f. nigrimanus</i> . |